The following is an abstract grammar defining the FIGURE language. Terminals are shown in bold font and nonterminals in italics. Literal characters are given in single quotes. Parentheses ( and ) indicate grouping when needed. Square brackets [ and ] enclose optional items. Vertical bars | separate alternatives.

*figure* : (**fig)** *id* ‘**{**‘ *stmt\_list* ‘**}**’

*stmt\_list* : *stmt* [ ‘**;**’  *stmt\_list*]

*stmt* : *range\_stmt*

| *plotting\_stmt*

| *assign\_stmt*

| *subplot*

*plotting\_stmt* : (*id* ‘**˂-**’ ‘**func**’ *id*) *attr\_list*

*range\_stmt* : (*number* ‘**to**’ *number*) *attr\_list*

*attr\_list* : ‘**[**‘ [*a\_list*] ‘**]**’

*a\_list* : (*id* ‘**=**’ *id*) [ ‘**,**’ *a\_list*]

*assign\_stmt* : *id* ‘**˂-**’ *function*

*subplot* : ‘**subplot**’ *id* ‘**{**‘ *stmt\_list* ‘**}**’

In below, [ ] shows range and ? shows optional items.

*number* : (-|+)([0-9]\*[.])?[0-9]+

*id* : [A-Za-z0-9\_]

*function* : [A-Za-z0-9] | (+|-|\*|^|/) | ‘(‘ | ‘)’